

Acute Respiratory Distress Syndrome (ARDS)

Part III: Novel Coronavirus Infection (COVID-19)

Introduction

In this unfolding case study that simulates the complexities of clinical practice, you will assume the role of a nurse in the critical care setting. You will use a holistic approach to provide safe care by making correct clinical judgments for a patient with ARDS and septic shock. You will need to apply essential knowledge to notice and interpret the most crucial assessment findings and lab values to properly establish care priorities and recognize a developing complication before it needlessly progresses.

Preparation for Care Activity

Recognizing Clinical Relationships

Review the medical history and home medications of this patient. For each home medication, identify the pharm. classification and expected outcome for this patient its most common side effect (SE). Finally, draw a line to determine which medication treats what condition.

Medical History	Home Medications	Pharm. Classification	Expected Outcome	Common SE
<ul style="list-style-type: none"> Diabetes type II Hypertension Seasonal allergies 	1. Metformin 1000 mg PO BID	Anti-hyperglycemic: Biguanide Class	Manage high blood Sugar levels	Nausea, upset stomach, low BS, diarrhea
	2. Glyburide 10 mg PO BID	Sulfonylureas	Controls blood Sugar levels	low BS, nausea, heart burn, feeling full, muscle/joint pain, blurred vision mild rash
	3. Lisinopril 20 mg PO daily	ACE - Inhibitor	Treats high BP, & congestive HF	Headache, dizziness, ↓ BP, chest pain, cough
	4. Loratadine 10 mg PO daily	Antihistamine	Treats allergy & Cold symptoms	Headache, drowsiness, dry mouth, stomach pain, vomiting

Part I: Developing Noticing and Interpreting Skills

1. Which findings from the *present problem* are **most important** and noticed by the nurse as clinically significant?

Most Important Findings	Clinical Significance
Can't catch breath Coarse crackling lungs bilaterally, using accessory muscles HR-134 RR-32 O ₂ -90% (on non-rebreather at 100%) Tested positive for COVID Pt has type II diabetes	Pt is showing signs of respiratory distress. Oxygen needs are increasing. Pt has an infection (COVID) and is at risk for worsening infection - R/F ineffective healing

2. Which data from the *social history* is **most important** and noticed by the nurse as clinically significant?

Most Important Findings	Clinical Significance
Divorced & estranged from children Homeless Poor living conditions at homeless shelter	Lack of support and resources Environment puts him at a greater risk for developing illness

3. Which findings from the *contextual factors* are **most important** and noticed by the nurse as clinically significant?

Most Important Findings	Clinical Significance
COVID pts make up all pts in ICU Caregiver fatigue	There's no break for the pts or caregivers. Pts are sick and unable to have physical interactions w/ loved ones. Nurses are overworked, which may lead to mistakes - sentinel events.

Patient Care Begins

Rhythm Interpretation	
Regular or Irregular: <i>irregular</i> P wave present? <i>NO</i> Rate: <i>118</i>	
Interpretation: <i>Atrial Fibrillation</i>	
Clinical Significance:	Intervention (if needed)
Heart is being overworked	Electrical cardioversion Anticoagulation Radiofrequency ablation Maze procedure Drugs to control rate

4. Which current vital sign findings are **most important** and noticed by the nurse as clinically significant?

Most Important Data	Clinical Significance	TREND: Improved/Declined/No Change
BIP - 98/52 O ₂ - 84 Temp - 102.5° RR - 22	Pts condition is worsening. Showing poor perfusion and worsening infection. Starting to tire out	BIP declined O ₂ declined RR improved, but really declined - Red Flag

5. What assessment data needs to be noticed as most important? Interpret its clinical significance.

Most Important Data	Clinical Significance	TREND: Improved/Declined/No Change
Anxious and body tense Breath sounds diminished Shallow respiratory effort labored respirations Skin hot & dry Need a biopap W	Poor perfusion all over. Not relaxing, overworking body.	Declined

Auscultate Anterior Breath Sounds

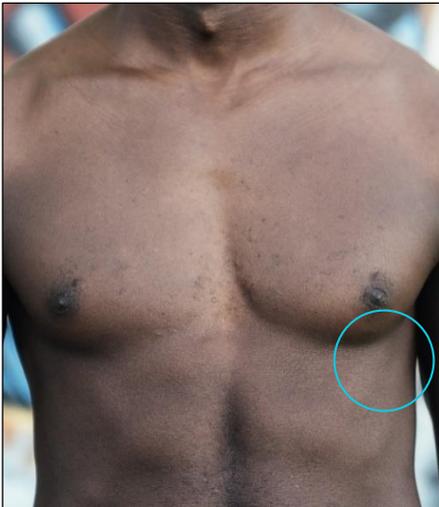


Place a circle on the chest where the nurse would place the stethoscope to auscultate the left lower lobe.

[Click this link to listen.](#) Identify what type of breath sounds are heard, and interpret their clinical significance.

Breath Sounds	Clinical Significance
Coarse Crackles	Secretions are not moving around. Putting pt at an increased risk for pneumonia. ARDS

Auscultate Heart Sounds



Place a circle on the chest where the nurse would place the stethoscope to auscultate the apical pulse.

[Click this link](#) to hear heart tones. Identify what type of heart sounds are heard, and interpret their clinical significance.

Heart Sounds	Clinical Significance
S1 & S2 auscultated: erratic, unorganized & inconsistent in rhythm	Blood isn't flowing to the lower heart chambers as it should leading to poor oxygen perfusion.

As you complete the head-to-toe assessment, you notice this finding in the flowsheet in the medical record:

Intake & Output	0800	1000	1200
Intake	150 mL	100 mL	60 mL
Output	0	0	0

6. Which findings from this new information are **most important** and noticed by the nurse as clinically significant?

Most Important Findings	Clinical Significance	Nurse Response
No output in 4 hours	Fluid retention, could be an issue with the kidneys	lay eyes on patient, bladder scan. Contact doctor

7. After evaluating the patient, identify the current nursing priority and which action(s) the nurse should take. List interventions by priority and the expected outcome.

Nursing Priority	Poor Perfusion — maintain airway	
Priority Interventions	Rationale	Expected Outcome
Oxygen therapy ↓ may need to intubate Diuretic administration	Help give heart and lungs a break Help pull fluid off the lungs	Improvement of gas exchange, maintenance of patent airways, prevention of trauma Diminish crackles, improve oxygenation

Misc.						
	Mg	COVID-19	Ion Ca	Lipase	Lactate (Ven) ↑	Hgb A1C

Which diagnostic findings are **most important** and noticed by the nurse as clinically significant?

Most Important Data	Clinical Significance	TREND Improved/Declined/No Change
Elevated Lactate	Organs are not functioning properly. Higher likelihood of dying.	Declined

Arterial Blood Gas (ABG)					
	pH	paCO2	paO2	HCO3	O2 sat

Which diagnostic findings are **most important** and noticed by the nurse as clinically significant?

Most Important Data	Clinical Significance
pH ↓ , PaCO ₂ ↑ , PaO ₂ ↓	uncompensated, respiratory acidosis, severe hypoxia

Lab Planning Activity

Lab Name	Clinical Significance	Priority Nursing Assessments/Interventions
Lactate Current Value: Critical Value		

Part II: Developing Responding Skills

1. Interpreting clinical data collected, list at least **two** problems that are possible for this patient? Which problem is the priority?

Possible Problems	Priority Problem	Pathophysiology of Priority Problem
Sepsis Respiratory ARDS	ARDS	Pulmonary infiltrates

Omar is successfully intubated and has a 7.0 mm endotracheal tube (ET) that is well secured, 24 cm at the lips.

Current vent settings are:

- CMV/AC rate 12
- TV 550 mL
- PEEP +5
- FiO2 100%.

A central line was placed in the right internal jugular (RIJ) vein. Correct placement of the ETT and central line was confirmed by chest x-ray.

He is sedated and not moving. His breath sounds have coarse crackles scattered bilat and aeration remains diminished. You note the following on the monitor:

2. Which current findings are **most important** and noticed by the nurse as clinically significant?

Most Important Data	Clinical Significance	TREND: Improved/Declined/No Change
Sinus Tachycardia Sedated & not moving	Continue to monitor Pt now intubated, dxs will ensure his safety while on vent	Improved improving

Medical Management of Care

3. Identify the rationale for each provider order and its expected outcome.

Care Provider Orders:	Rationale:	Expected Outcome:
Ventilator settings: CMV/AC rate 12, TV 550 mL, PEEP +5, Fi O2 100%.	Maintain & protect airway	O2 above 90%. Tolerate settings
Norepinephrine IV infusion (0.5-30 mcg/min) to maintain MAP >65.		Help LOC & perfusion
Vasopressin 0.04 IV infusion	Contracts smooth muscle. Helps bring up BP	Help perfusion
0.9% NS IV infusion 100 mL hour	Pt NPO, help hydrate	
Fentanyl IV infusion 10-125 mcg/hour. RASS goal -3 (Mod. Sedation)	for pain & sedation	Help him not fight the vent
Dexmedetomidine IV infusion 0.2-1 mcg/kg/hour. RASS goal -3 (Mod. Sedation). (Pt weighs 83 kg)	Maintain sedation	
Chlorhexidine 15 mL oral/swab every 12 hours	Maintain asepsis	
Famotidine 20 mg IV every 12 hours	Help with ulcers	
Heparin 5000 units SQ every 8 hours	Prevent blood clots	
Insert urinary catheter	Strict I's & O's	Monitor perfusion

Nursing Management of Care

4. After interpreting clinical data collected, identify the nursing priority and three priority interventions. For each intervention write the rationale and expected outcome.

Nursing Priority		
Priority Intervention(s)	Rationale	Expected Outcome
Assess O2 Maintain Airway Restrain Turn, bathe, etc.		

5. Identify the psychosocial/holistic care priority based on the findings you noticed as most important. List appropriate interventions, rationale, and expected outcomes.

Psychosocial/Holistic Care Priority	Lack of resources, anxiety, death	
Priority Interventions	Rationale	Expected Outcome
Case management Staying with pt when possible Pastoral care May want someone notified	Prevent spiritual stress	

Education/Discharge Planning

6. Identify three priority educational topics that must be included in a teaching plan to prevent complications.

Teaching About Illness	Treatment Priorities
Educate on why he has said lines & tubes	Do not pull out your tube or lines

Part III: Developing Evaluation Skills

1. For each finding, make a clinical judgment by placing an "x" in the appropriate column if the patient's condition has improved, has not changed, or has declined.

Assessment Finding	Improved	No Change	Declined
T: 101.8 F/39.3 C (oral)	✓		
P: 114 (regular)		✓	
R: 20			✓
BP: 92/50 MAP: 64			✓
O2 sat: 91% vent: FiO2 100%			✓
Breath sounds coarse crackles bilaterally		✓	
20 mL light yellow urine past 2 hours	✓		
Body tense, moving hands toward mouth			✓
Eyes are open and follows the nurse's command to squeeze his hand			✓

Write a concise narrative nurse's note to document what was most important in the medical record at the end of your shift.

*Give clear picture on EXACTLY what happened!
 you have to be able to track your evaluation*

Nurse Reflection

To strengthen your clinical judgment skills, reflect on your knowledge and the decisions made caring for this patient by answering the reflection questions below.

Reflection Question	Nurse Reflection
As you worked through this simulation, how did it make you feel?	<i>Made us think used clinical judgement</i>
What did you already know and do well on this simulation?	<i>Understanding the changes in strips, respiratory status</i>
What areas do you need to develop/improve?	<i>Knowing what priority should be taken care of</i>
What did you learn? How will you apply what was learned to improve patient care?	<i>We learned what areas we need to work on. We also learned we actually knew more than we thought we did.</i>